

263LIST83GB.APP
SEQUENCE LISTING

<110> Commissariat à l'Energie Atomique
Centre National de la Recherche Scientifique
GONDRY Muriel
GENET Roger
LAUTRU Sylvie
PERNODET Jean-Luc

<120> Polynucleotides and polypeptides coded by said polynucleotides
involved in the synthesis of diketopiperazine derivatives

<130> CGA263/83FR

<140>

<141>

<160> 23

<170> PatentIn Ver. 2.1

<210> 1

<211> 657

<212> DNA

<213> Streptomyces noursei

<400> 1

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| aggggattga | tgtagctca | cagttcatct | gaatcgccgc | cggaatcctt | gccggacgcg | 120 |
| tggacgggtc | tcaaaacccg | taccgcccgc | cgcaattacg | cgaaagagcc | ggtcgacgac | 180 |
| gcgctgatcg | agcagctgtt | ggaggccatg | ctcgccgcgc | cgaccgcctc | caaccggcag | 240 |
| gcgtggtcgt | tcatgggtgt | gcgcaggccc | gccgcgggtc | gccggctgcg | cgcgttctcg | 300 |
| cccgggggtg | tgggaacccc | cgcttctctc | gtcgtggcct | gcgtcgaccg | cagtctgacc | 360 |
| gacaacctct | ccccgaagct | ctcgacagaag | atctacgaca | ccagcaagct | ctgtgtcgcc | 420 |
| atggcggtgg | agaacctgct | gctcgcggcg | cacgcggccg | gcctgggagg | atgcccgggtg | 480 |
| ggcagcttca | ggtcggacat | cgtcaccagc | atgctcggtg | tcccgggaaca | catcgagccg | 540 |
| atgctcgtgg | tcccgatcgg | ccgtcccgcg | acagccctcg | tcccctccca | gcgccgcgcc | 600 |
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<213> Streptomyces noursei

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| gtctatctgc | tcagcagcgg | ccgcggactc | ctggaggagc | cggccgacta | cggaatttac | 120 |
| cgctgtaccg | acggggcccc | tcggggcgctc | caactcctcg | acgaacacgg | cgggagcacg | 180 |
| gcacggctga | ccgcggtccg | cgagcgctctc | gacgaggtca | tggtcgcgcc | gatggggcag | 240 |
| gaccgggaca | tgggcgcgat | tctggacgac | ctgtgtcgcc | aaatggcaga | cgctcttccg | 300 |
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<210> 3

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<212> DNA

<213> Streptomyces noursei

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| cgacgccgat | tgatccggca | acgcgggtgag | cacgccctca | tcggaatcag | tgccgggcaac | 120 |
| agttatttca | gccagaagaa | caccgtcatg | ctgctgcaat | gggcccgggca | gcgttttcgag | 180 |
| cgacccgatg | tcgtctatgt | cgacacccac | atcgacgaga | tgctgatcgc | cgacggccgcg | 240 |
| agcgcgcagg | aggccgagcg | gtcgggtcaaa | cgcacgctca | aggatctgcg | gcgcgactc | 300 |
| cggcgctcgc | tggagagcgt | gggcgaccac | gccgagcggt | tccgtgtccg | gtccctgtcc | 360 |
| gagctccagg | agacccctga | gtaccggggc | gtacgcgagc | gcaccgaccg | ggccttcgag | 420 |

263LIST83GB.APP

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|------------|------------|------------|------------|-------------|-------------|-----|
| gaggacgccc | aattcgccac | cgcctgcgag | gacatggtgc | gggcccgtggt | gatgaaccgg | 480 |
| cccggtagcg | gcgtcgccat | ctccgcggaa | cacctgcggg | ccggtctgaa | ctacgtgctg | 540 |
| gccgaggccc | cgctcttcgc | ggactcgcgc | ggagtcttct | ccgtccctct | ctcgggtgctc | 600 |
| tgctaccaca | tcgacacccc | gatcacggcg | ttcctgtccc | ggcgcgagac | cggtttccgg | 660 |
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<210> 4
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 <213> Streptomyces noursei

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| | accgtcaccg | ccaccacgag | ccagggcagg | gcactcctgc | ggagcctgac | gccgctgttc | 180 |
| | gtggacgccc | cgatcccgt | cggctcgtac | ttctctctcg | ccgagggtt | cggcatgagc | 240 |
| | acggtcgccc | cgctggcctg | gagcagcgtg | gtcccggcgc | tgcgacgat | ctggggcctg | 300 |
| | gtccgggagc | ggacgggtcaa | cggcctcgcg | ctgctgatcc | tcgtcgtcaa | cgtggtgggg | 360 |
| | ctggcgacga | gcaccctgac | cggcgatgcc | cggctgatga | tgccaagga | cagcggcgctc | 420 |
| | agcagcgtcg | tcgggatcgc | gatcctgctc | tcggtgcgcg | gccggcgccc | gctgatgacc | 480 |
| | gccggactcc | ggccctgggt | gaccaagggg | agcccggagg | ggaacgccgc | atgggaccgg | 540 |
| | ctgtgggcgc | gcagcgcgcg | gttcgggcaa | ctggagcggc | gattctcgac | ggtctggggg | 600 |
| | agcgccctgc | tgatcgagtg | cgtggtcaag | gtcgtcgggt | cgtacgtcct | gccggtgcac | 660 |
| | accatggtgt | ggctgggcac | ggtgctgacg | gtggtggcga | tcctgctggc | catggtggtc | 720 |
| | gcgggcggcg | gcagcgccga | gccgatggag | cggatggtca | aggccgaggt | cggggccgcc | 780 |
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<210> 5
 <211> 3839
 <212> DNA
 <213> Streptomyces noursei

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| | cgccgcccga | atccttgccg | gacgcgtgga | cggtcctcaa | aaccctgacc | gccgtccgca | 180 |
| | attacgcgaa | agagccgggtc | gacgacgcgc | tgatcgagca | gctgttgagg | gccatgctcg | 240 |
| | ccgcgccgac | cgcctccaac | cggcaggcgt | ggtcgttcat | gggtggtgcg | aggcccgcg | 300 |
| | cggtccgccc | gctgcgcgcg | ttctcgccc | gggtgctggg | aacccccgcc | ttcttcgtcg | 360 |
| | tggtcgtcgt | cgaccgcgag | ctgaccgaca | acctctcccc | gaagctctcg | cagaagatct | 420 |
| | acgacaccag | caagctctgt | gtcgccatgg | cgggtggagaa | cctgctgctc | gcggcgacag | 480 |
| | cggccggcct | gggcggatgc | ccggtgggca | gcttcagggtc | cgacatcgct | accagcatgc | 540 |
| | tcggtatccc | ggaacacatc | gagccgatgc | tcgtgggtccc | gatcggccgt | cccgcgacag | 600 |
| | ccctcgctcc | ctcccagcgc | cgcgccaaga | atgaggtcgt | caactatgaa | tcctggggaa | 660 |
| | accgtgctgc | cgccccaaact | gcgtgaggag | atcgcgctcc | tcgccgtcta | tctgctcagc | 720 |
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| | agcacacgtc | gcacgcgggg | ggaccggtca | tgactcaagc | cgccaccgtc | accgccacca | 1920 |
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263LIST83GB.APP

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<210> 6

<211> 219

<212> PRT

<213> Streptomyces noursei

<400> 6

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          20          25          30
Pro Pro Glu Ser Leu Pro Asp Ala Trp Thr Val Leu Lys Thr Arg Thr
          35          40          45
Ala Val Arg Asn Tyr Ala Lys Glu Pro Val Asp Asp Ala Leu Ile Glu
          50          55          60
Gln Leu Leu Glu Ala Met Leu Ala Ala Pro Thr Ala Ser Asn Arg Gln
          65          70          75
Ala Trp Ser Phe Met Val Val Arg Arg Pro Ala Ala Val Arg Arg Leu
          85          90          95
Arg Ala Phe Ser Pro Gly Val Leu Gly Thr Pro Ala Phe Phe Val Val
          100          105          110
Ala Cys Val Asp Arg Ser Leu Thr Asp Asn Leu Ser Pro Lys Leu Ser
          115          120          125
Gln Lys Ile Tyr Asp Thr Ser Lys Leu Cys Val Ala Met Ala Val Glu
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Asn Leu Leu Leu Ala Ala His Ala Ala Gly Leu Gly Gly Cys Pro Val
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263LIST83GB.APP

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 His Ile Glu Pro Met Leu Val Val Pro Ile Gly Arg Pro Ala Thr Ala
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 <213> Streptomyces noursei

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 35 40 45
 Leu Gln Leu Leu Asp Glu His Gly Gly Ser Thr Ala Arg Leu Thr Ala
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 Val Arg Glu Arg Leu Asp Glu Val Met Phe Ala Pro Met Gly Glu Asp
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 35 40 45
 Glu His Gly Gly Ser Thr Ala Arg Leu Thr Ala Val Arg Glu Arg Leu
 50 55 60
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<210> 9
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 <212> PRT
 <213> Streptomyces noursei

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 35 40 45
 Val Met Leu Leu Gln Trp Ala Gly Gln Arg Phe Glu Arg Thr Asp Val
 50 55 60
 Val Tyr Val Asp Thr His Ile Asp Glu Met Leu Ile Ala Asp Gly Arg
 65 70 75 80
 Ser Ala Gln Glu Ala Glu Arg Ser Val Lys Arg Thr Leu Lys Asp Leu
 85 90 95
 Arg Arg Arg Leu Arg Arg Ser Leu Glu Ser Val Gly Asp His Ala Glu
 100 105 110
 Arg Phe Arg Val Arg Ser Leu Ser Glu Leu Gln Glu Thr Pro Glu Tyr
 115 120 125
 Arg Ala Val Arg Glu Arg Thr Asp Arg Ala Phe Glu Glu Asp Ala Glu
 130 135 140
 Phe Ala Thr Ala Cys Glu Asp Met Val Arg Ala Val Val Met Asn Arg
 145 150 155 160
 Pro Gly Asp Gly Val Gly Ile Ser Ala Glu His Leu Arg Ala Gly Leu
 165 170 175
 Asn Tyr Val Leu Ala Glu Ala Pro Leu Phe Ala Asp Ser Pro Gly Val
 180 185 190
 Phe Ser Val Pro Ser Ser Val Leu Cys Tyr His Ile Asp Thr Pro Ile
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 35 40 45

263LIST83GB.APP

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 65 70 75 80
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 85 90 95
 Ile Trp Gly Leu Val Arg Glu Arg Thr Val Asn Gly Leu Ala Leu Leu
 100 105 110
 Ile Leu Val Val Asn Val Val Gly Leu Ala Thr Ser Thr Leu Thr Gly
 115 120 125
 Asp Ala Arg Leu Met Met Ala Lys Asp Ser Gly Val Ser Ser Val Val
 130 135 140
 Gly Ile Ala Ile Leu Leu Ser Val Arg Gly Arg Arg Pro Leu Met Thr
 145 150 155 160
 Ala Gly Leu Arg Pro Trp Val Thr Lys Gly Ser Pro Glu Gly Asn Ala
 165 170 175
 Ala Trp Asp Arg Leu Trp Ala Arg Ser Ala Arg Phe Arg Gln Leu Glu
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 Arg Arg Phe Ser Thr Val Trp Gly Ser Ala Leu Leu Ile Glu Cys Val
 195 200 205
 Val Lys Val Val Gly Ala Tyr Val Leu Pro Val His Thr Met Val Trp
 210 215 220
 Leu Gly Thr Val Leu Thr Val Val Ala Ile Leu Leu Ala Met Val Val
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<210> 11
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<210> 12
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 <212> PRT
 <213> Streptomyces noursei

<400> 12
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<210> 13
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 <212> PRT
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<400> 13
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<210> 14
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 <213> Artificial sequence

<220>
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<400> 15
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